



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 09/660,094 | 09/12/2000 | Ashok N. Rudrapatna | 15-5 | 7322 |
| 30594 | 7590 | 05/12/2004 | | |
| HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195 | | | | |
| | | | EXAMINER KADING, JOSHUA A | |
| | | | ART UNIT 2661 | PAPER NUMBER |

DATE MAILED: 05/12/2004

C

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,094

Applicant(s)

RUDRAPATNA ET AL.

Examiner

Joshua Kading

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 1,6,10 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 1, 6, 10, and 14 are objected to because of the following informalities:

Claim 1, line 5; claim 6, line 5; claim 10, line 5; and claim 14, line 5 state "the
5 second subspaces". There is only one second subspace; therefore this should be
changed to --the second subspace--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

10 The specification shall contain a written description of the invention, and of the manner and process of
making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
set forth the best mode contemplated by the inventor of carrying out his invention.

15 Claims 3, 7, 11, and 16 are rejected under 35 U.S.C. 112, first paragraph, as
failing to comply with the enablement requirement. The claim(s) contains subject matter
which was not described in the specification in such a way as to enable one skilled in
the art to which it pertains, or with which it is most nearly connected, to make and/or use
the invention.

20 Claims 3, 7, 11, and 16 recite the following limitation: "the user is using the
second code in the first subspace." However, the independent claims of claims 3, 7, 11,
and 16 recite the following limitation (or equivalent variant): "assigning a first code to a
user currently using a second code in one subspace; and performing an in-sector
handoff of the user from the second code to the first code." Applicant's specification also
25 contains support for the limitations of the independent claims, see page 4, lines 1-12.

Art Unit: 2661

From applicant's specification and claims, it is not clear how one skilled in the art would have a user use a first code in one subspace (either the one the user is in or a different one) while using a second code in the first subspace? Even if the first and second codes are in the same subspace, how (if the user was handed-off to the first code from
5 the second code) can the user be currently using the first code and the second code?

The following is a quotation of the second paragraph of 35 U.S.C. 112:

10 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15 Claims 1, 2, 6, 10, 14, and 15 disclose "using a second code in one subspace" (claims 1, 6, 10, and 14) and "assigning the second code to a different subspace" (claims 2, 6, 10, and 15). It is not clear which subspaces applicant is referring to. Are the "one subspace" and "different subspace" chosen from the first and second subspaces previously disclosed or are they chosen from subspaces separate from the
20 first and second subspaces? It must be made clear from where the "one subspace" and "different subspace" are chosen.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
25 obviousness rejections set forth in this Office action:

Art Unit: 2661

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin et al. (U.S. Patent 5,301,356) in view of Schiling (U.S. Patent 5,410,568).

Regarding claims 1 and 14, Bodin discloses "a method for partitioning code space in a communication system, comprising the steps of:

dividing a code space into at least two subspaces, where codes in the first subspace are assigned to at least one user at a time for a communication session... (figure 6, elements 224 and 228 where the general channel comes from the first subspace (general channels subspace) and the reserved channels comes from the second subspace (reserved channels subspace), thus there are two subspaces; it is also noted that a channel, as is known in the art, represents a user or call in the system, thus each channel is assigned to one user; it should also be noted that although Bodin mentions channels instead of codes, it is known in the art that channels can be used as a generic term that includes the codes of a code division system as can be read in col. 1, lines 47-55);

assigning a first code to a user currently using a second code in one subspace (figure 6, elements 224, 228, 230 whereby searching for a channel (code) in "this target BS" it is suggested that the user is currently using a second code of the first subspace but none are available, therefore the user searches for a code in the second subspace (reserved) and finds one that is then assigned to the user); and

performing an in-sector handoff of the user from the second code to the first code (figure 6, element 230; col. 11, lines 22-23; it should also be noted that although the handoff is not described as an "in-sector handoff", the same principles apply as noted by applicant in the specification, page 4, lines 7-10)."

5 However, Bodin lacks what Schilling discloses, that is "...where all of the codes in the second subspace are assigned to one user (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots; wherein each time slot is assigned to one user and each slot has access to all the codes in the subspace, but as is known in the art a user can only use one code at a time, therefore the user only uses
10 one code from the subspace during its time slot)..." and "...all of the codes in the second subspace are assigned to one of a plurality of users on a time shared basis (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots)..."

 It would have been obvious to one with ordinary skill in the art at the time of
15 invention to include the time shared basis with the rest of the method for the purpose of having little or no interference between users. The motivation is to allow full duplex communication between a base station and user (Schilling, col. 1, lines 29-39 and 61-65).

20 Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin and Schilling as applied to claims 1 and 14 above, and further in view of Gilhousen (WO 95/03652).

Regarding claims 2 and 15, Bodin and Schilling disclose the methods of claims 1 and 14. However, Bodin and Schilling lack what Gilhousen discloses, that is "assigning the second code to a different subspace (page 11, lines 3-4 where the Walsh sequence is the second code and by reusing the second code in neighboring cells and sectors the code is assigned to a different subspace)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the assigning of the second code to a different subspace with the methods of claims 1 and 14 for the purpose of reusing the channel. The motivation is to not waste resources.

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin et al. in view of Schilling and further in view of Gilhousen.

Regarding claims 6 and 10, Bodin discloses "a method for partitioning code space in a communication system, comprising the steps of:

dividing a code space into at least two subspaces, where codes in the first subspace are assigned to at least one user at a time for a communication session... (figure 6, elements 224 and 228 where the general channel comes from the first subspace (general channels subspace) and the reserved channels comes from the second subspace (reserved channels subspace), thus there are two subspaces; it is also noted that a channel, as is known in the art, represents a user or call in the system, thus each channel is assigned to one user; it should also be noted that although Bodin mentions channels instead of codes, it is known in the art that channels

can be used as a generic term that includes the codes of a code division system as can be read in col. 1, lines 47-55);

assigning a first code to a user currently using a second code in one subspace (figure 6, elements 224, 228, 230 whereby searching for a channel (code) in "this target
5 BS" it is suggested that the user is currently using a second code of the first subspace but none are available, therefore the user searches for a code in the second subspace (reserved) and finds one that is then assigned to the user); and

performing an in-sector handoff of the user from the second code to the first code (figure 6, element 230; col. 11, lines 22-23; it should also be noted that although the
10 handoff is not described as an "in-sector handoff", the same principles apply as noted by applicant in the specification, page 4, lines 7-10)."

However, Bodin lacks what Schilling discloses, that is "...where all of the codes in the second subspace are assigned to one user (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots; wherein each time slot is
15 assigned to one user and each slot has access to all the codes in the subspace, but as is known in the art a user can only use one code at a time, therefore the user only uses one code from the subspace during its time slot)..." and "...all of the codes in the second subspace are assigned to one of a plurality of users on a time shared basis (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared
20 slots)..."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the time shared basis with the rest of the method for the purpose of

having little or no interference between users. The motivation is to allow full duplex communication between a base station and user (Schilling, col. 1, lines 29-39 and 61-65).

5 Bodin and Schilling also lack what Gilhousen discloses, that is "assigning the second code to a different subspace (page 11, lines 3-4 where the Walsh sequence is the second code and by reusing the second code in neighboring cells and sectors the code is assigned to a different subspace)."

10 It would have been obvious to one with ordinary skill in the art at the time of invention to include the assigning of the second code to a different subspace with the steps described by Bodin and Schilling for the purpose of reusing the channel. The motivation is to not waste resources.

15 Claims 4, 5, 12, 13, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin, Schilling, and Gilhousen as applied to claims 1, 6, 10, and 14 above, and further in view of Arai et al. (U.S. Patent 5,907,545).

20 Regarding claims 4, 12, and 17, Bodin, Schilling, and Gilhousen disclose the methods of claims 1, 6, 10, and 14. However, Bodin, Schilling, and Gilhousen lack what Arai discloses, that is "the first subspace is used for voice communication (figure 7, figure 14, element S1402 where if it is a voice communication it is clearly transmitted using the voice channels as in figure 7)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the voice channels with the

methods of claims 1, 6, 10, and 14 because voice transmission requires different transmission requirements than data (Arai, col. 1, lines 60-65). The motivation being that since both voice and data have different requirements for communication, there needs to be separate channels to have an effective voice/data system.

5

Regarding claims 5, 13, and 18 Bodin, Schilling, and Gilhousen disclose the methods of claims 1, 6, 10, and 14. However, Bodin, Schilling, and Gilhousen lack what Arai discloses, that is "the second subspace is used for data communication (figure 8, figure 16, element S1601 where if it is a data communication it is clearly transmitted using the data channels as in figure 8)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the data channels with the methods of claims 1, 6, 10, and 14 because data transmission requires different transmission requirements than voice (Arai, col. 1, lines 60-65). The motivation being that since both voice and data have different requirements for communication, there needs to be separate channels to have an effective voice/data system.

15

Response to Arguments

Applicant's arguments, see Remarks pages 7-9, filed 27 February 2004, with respect to the rejection(s) of claim(s) 1-18 under 35 U.S.C. 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of clearer understanding of applicant's invention and newly found prior art.

20

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (703) 305-0342. The examiner can normally be reached on M-F: 8:30AM-5PM.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for
10 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

15



Joshua Kading
Examiner
Art Unit 2661

May 5, 2004



KENNETH VANDERPUYE
PRIMARY EXAMINER